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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,676	06/29/2001	Hyeon Ho Son	49128-5018	9570

9629                      7590                      08/07/2003

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 08/07/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/893,676

Applicant(s)

SON ET AL.

Examiner

Jennifer T Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-7, 12-19, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Zavracky et al. (U.S. Patent No. 6,552,704).

Regarding claims 1, 13 and 16, referring to Figs. 12A and 12B, Zavracky teaches a method of driving a liquid crystal display device (1112) during one display frame, comprising the steps of: applying one of a high level common voltage (Vcom high) and a low level common voltage (Vcom low) to a plurality of liquid crystal cells of the liquid crystal display device (1112) to write data into the liquid crystal cells within a time interval shorter than one display frame interval; and turning on a backlight (1111) after said data writing to display an image (col. 10, lines 37-67, col. 11, lines 1-46, and col. 13, lines 23-49).

Regarding claims 2 and 15, referring to Fig. 12B, Zavracky teaches the liquid crystal cells to respond according to the data written between the time when the data is written and when the backlight (1111) is turned on (col. 11, lines 1-35).

Regarding claims 3 and 14, Zavracky teaches a common voltage lower than the high-level common voltage and greater than the low-level common voltage is applied as a reference voltage to the liquid crystal cells (col. 10, line 66 to col. 11, line 22).

Regarding claims 4 and 17, referring to Fig. 12B, Zavracky teaches re-aligning the liquid crystal cells after the step of turning on the backlight (13, lines 23-49).

Regarding claims 5 and 18, Zavracky teaches at the step of re-aligning, one of the high-level common voltage or the low-level common voltage is applied (Fig. 12B).

Regarding claims 6 and 19, Zavracky teaches at the step of re-aligning, a common voltage having a polarity opposite to the common voltage applied when the data is written is applied (col. 13, lines 23-37).

Regarding claim 7, Zavracky teaches when data is being written, an effective voltage remaining in the liquid crystal cell is larger than a data voltage applied to the liquid crystal cell (col. 11, line 64 to col. 12, lines 8).

Regarding claims 12 and 24, Zavracky teaches the driving method is applied to twisted nematic mode liquid crystal display device (col. 13, lines 1-2).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-11 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zavracky et al. (U.S. Patent No. 6,552,704).

Regarding claims 8, 10, 20, and 22, Zavracky differs from claims 8 and 20 in that he does not specifically teach the high-level common voltage is equal to or more than +15V. Zavracky

Art Unit: 2674

teaches the high-level common voltage is 8 volts (col. 10, lines 66-67). It would have been obvious to obtain the high-level common voltage is equal to or more than +15V in order to reduce the generation of a residual image and a flicker and to improve the quality picture image.

Regarding claims 9 and 21, Zavracky further teaches the high-level common voltage is equal to a gate high voltage applied to a gate electrode of a thin film in transistor of the liquid crystal cell (Figs. 12A and 12B, col. 10, lines 55-67, col. 11, lines 1-22).

Regarding claims 11 and 23, Zavracky further teaches the low-level common voltage is equal to a gate low voltage applied to a gate electrode of a thin film transistor in the liquid crystal cell (Figs. 12A and 12B, col. 10, lines 55-67, col. 11, lines 1-22).

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Matsuo et al. (U.S. Patent No. 5,666,133) teaches method for driving LCD.

Hasegawa et al. (Pub. No. US 2001/001979) teaches liquid crystal display device.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, DC. 20231

Art Unit: 2674

**Or faxed to: 703-872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Technology Center 2600 Customer Service Office whose telephone  
number is 703-306-0377.

Jennifer T. Nguyen  
08/01/2003  
Art Unit 2674



RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600